General

Guideline Title

SAGES evidence-based guidelines for the laparoscopic resection of curable colon and rectal cancer.

Bibliographic Source(s)

Society of American Gastrointestinal Endoscopic Surgeons (SAGES). SAGES evidence-based guidelines for laparoscopic resection of curable colon and rectal cancer. Los Angeles (CA): Society of American Gastrointestinal Endoscopic Surgeons (SAGES); 2012 Feb. 15 p. [119 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Guidelines for laparoscopic resection of curable colon and rectal cancer. Los Angeles (CA): Society of American Gastrointestinal Endoscopic Surgeons (SAGES), American Society of Colon and Rectal Surgeons (ASCRS); 2005 Jul. 12 p. [68 references]

Recommendations

Major Recommendations

Definitions of the levels of evidence (+,++,+++,++++) and the grades of the recommendations (weak or strong) are provided at the end of the "Major Recommendations" field.

Diagnostic Evaluation

Tumor Localization

When approaching colon resection laparoscopically, every effort should be made to localize the tumor preoperatively. Small lesions should be marked endoscopically with permanent tattoos before surgery to maximize the surgeon's ability to identify the lesion. Surgeons should be prepared to use colonoscopy intraoperatively if lesion localization is uncertain. (++OO, strong)

Diagnostic Evaluation for Metastases

The authors recommend that for patients with colon or rectal cancer, the chest, abdomen, and pelvis be evaluated preoperatively with computed tomography (CT) scan. In patients with rectal cancer, the authors also recommend preoperative locoregional staging with endorectal ultrasound or magnetic resonance imaging (MRI). (++OO, strong)

Preparation for Operation

The authors suggest that preoperative mechanical bowel preparation be used to facilitate manipulation of the bowel during the laparoscopic approach and to facilitate intraoperative colonoscopy when needed. (++OO, weak)

Surgical Technique and Operative Considerations

Surgical Technique – Colon

The authors recommend that laparoscopic resection follow standard oncologic principles: proximal ligation of the primary arterial supply to the segment harboring the cancer, appropriate proximal and distal margins, and adequate lymphadenectomy. (++++, strong)

Surgical Technique – Rectum

The authors recommend that laparoscopic resection for rectal cancer follow standard oncologic principles: Adequate distal margin, ligation at the origin of the arterial supply for the involved rectal segment, and mesorectal excision. (+++O, strong)

Locally Advanced Adherent Colon and Rectal Tumors

For locally advanced adherent colon and rectal tumors, an en bloc resection is recommended. The authors suggest an open approach if a laparoscopic en bloc resection cannot be performed adequately. (++OO, weak)

Obstructing Colon Cancer

The authors recommend that patients with an obstructing right or transverse colon cancer undergo a right or extended right colectomy. The open approach is required if the laparoscopic approach will not result in an oncologically sound resection. (++OO, strong)

The authors suggest that for patients with an obstructing left-sided colon cancer, the procedure be individualized according to clinical factors. Colonic stenting may increase the likelihood of completing a one-stage procedure and may decrease the likelihood of an end colostomy. (+++O, weak)

Prevention of Wound Complications

The use of a wound protector at the extraction site and the irrigation of port sites and extraction site incisions may reduce abdominal wall cancer recurrences. (++OO, strong)

Robotic Surgery

While robotic surgery for colon and rectal cancer appears feasible and safe, in the absence of long-term oncologic outcome studies, no clear recommendation can be made. (++OO, weak)

Training and Experience

Before surgeons apply the laparoscopic approach for the resection of curable colon and rectal cancer, they must have adequate knowledge, training, and experience in laparoscopic techniques and oncologic principles. (+++O, strong)

Definitions:

Quality of Evidence

Both the quality of the evidence and the strength of the recommendation for each of the guidelines were assessed according to the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system.* There is a 4-tiered system for quality of evidence:

Quality of Evidence	Definition	Symbol Used
High quality	Further research is very unlikely to alter confidence in the estimate of impact	++++
Moderate quality	Further research is likely to alter confidence in the estimate of impact and may change the estimate	+++O
Low quality	Further research is very likely to alter confidence in the estimate of impact and is likely to change the estimate	++OO
Very low quality	Any estimate of impact is uncertain	+OOO

Strength of Recommendations

There is a 2-tiered system for strength of recommendation (weak or strong):

Strong: It is very certain that benefit exceeds risk for the option considered

Weak: Risk and benefit well balanced, patients and providers faced with differing clinical situations likely would make different choices, or benefits available but not certain regarding the option considered.

*Adapted from Guyatt GH, Oxman AD, Vist GE, et al; GRADE Working Group. GRADE: An emerging consensus on rating quality of evidence and strength of recommendations. BMJ 2008; 336:924-6.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Curable colon and rectal cancer

Note: The guideline does not address the endoscopic screening or surveillance for colorectal cancer.

Guideline Category

Assessment of Therapeutic Effectiveness

Diagnosis

Evaluation

Management

Treatment

Clinical Specialty

Colon and Rectal Surgery

Gastroenterology

Oncology

Intended Users

Physicians

Guideline Objective(s)

To provide surgeons with recommendations on the safe performance of laparoscopic resection for curable colon and rectal cancer

Target Population

Patients with curable colon and rectal cancer

Interventions and Practices Considered

1. Diagnostic evaluation
    - Preoperative localization and assessment of the tumor in the colon or rectum
    - Marking of small lesions endoscopically with permanent tattoos
    - Use of intraoperative colonoscopy if lesion localization is uncertain
    - Preoperative computed tomography (CT) scan of the chest, abdomen, and pelvis to evaluate for metastases
    - Preoperative locoregional staging with endorectal ultrasound or magnetic resonance imaging (MRI) in patients with rectal cancer
2. Preoperative mechanical bowel preparation
3. Laparoscopic tumor resection following standard oncologic principles
4. Laparoscopic en bloc resection for locally advanced adherent colon and rectal tumors
5. Right or extended right colectomy for obstructing right or transverse colon cancer
6. Colonic stenting for obstructing left-sided colon cancer
7. Prevention of wound implants (use of wound protectors and irrigation of port and extraction sites)
8. Use of robotic surgery (considered but no recommendation made)
9. Ensuring appropriate training and experience in laparoscopic techniques for surgeons

Major Outcomes Considered

- Survival
- Incidence of recurrence
- Wound complications

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

A systematic literature search was performed on MEDLINE. The search strategy was limited to adult English language articles and: Clinical Trial, Practice Guideline, Clinical Trial, Phase I, Clinical Trial, Phase II, Clinical Trial, Phase III, Clinical Trial, Phase IV, Consensus Development Conference, Consensus Development Conference, NIH, Controlled Clinical Trial, Guideline, Randomized Controlled Trial, Meta-Analysis, Systematic Reviews, Robotics, Surgical Procedures, Minimally Invasive and Colorectal Cancer.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Quality of Evidence

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Quality of Evidence	Definition	Symbol Used
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Moderate quality	Further research is likely to alter confidence in the estimate of impact and may change the estimate	+++O
Low quality	Further research is very likely to alter confidence in the estimate of impact and is likely to change the estimate	++OO
Very low quality	Any estimate of impact is uncertain	+OOO
*Adapted from: Guyatt GH, Oxman AD, Vist GE, et al; GRADE Working Group. GRADE: An emerging consensus on rating quality of evidence and strength of recommendations. BMJ 2008; 336:924-6.		

Methods Used to Analyze the Evidence

Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Not stated

Rating Scheme for the Strength of the Recommendations

Strength of Recommendations

Both the quality of the evidence and the strength of the recommendation for each of the guidelines were assessed according to the GRADE system.*

There is a 2-tiered system for strength of recommendation (weak or strong):

Strong: It is very certain that benefit exceeds risk for the option considered.

Weak: Risk and benefit well balanced, patients and providers faced with differing clinical situations likely would make different choices, or benefits available but not certain regarding the option considered.

*Adapted from: Guyatt GH, Oxman AD, Vist GE, et al; GRADE Working Group. GRADE: An emerging consensus on rating quality of evidence and strength of recommendations. BMJ 2008; 336:924-6.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

This guideline, written by the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES), was reviewed and approved for endorsement by the Executive Council of the American Society of Colon and Rectal Surgeons (ASCRS) on 23 February 2012.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

The safe performance of laparoscopic resection for curable colon and rectal cancer
Appropriate clinical management of patients with curable colon and rectal cancer

Potential Harms

- Possible occurrence of wound implants and port-site metastasis
- Excessive force, the use of instruments not suitable for handling the bowel, and other techniques that predispose to inadvertent perforation should be avoided considering that perforation at the tumor site results in increased rates of local recurrence and a significant reduction in 5-year survival.

Qualifying Statements

Qualifying Statements

- Guidelines for clinical practice are intended to indicate preferable approaches to medical problems as established by experts in the field. These recommendations will be based on existing data or a consensus of expert opinion when little or no data are available.
- Guidelines are applicable to all physicians who address the clinical problem(s) without regard to specialty training or interests, and are intended to indicate the preferable, but not necessarily the only acceptable approaches due to the complexity of the healthcare environment. Guidelines are intended to be flexible. Given the wide range of specifics in any health care problem, the surgeon must always choose the course best suited to the individual patient and the variables in existence at the moment of decision.
- Guidelines are developed under the auspices of the Society of American Gastrointestinal and Endoscopic Surgeons and its various committees, and approved by the Board of Governors. Each clinical practice guideline has been systematically researched, reviewed and revised by the guidelines committee, and reviewed by an appropriate multidisciplinary team. The recommendations are therefore considered valid at the time of its production based on the data available. Each guideline is scheduled for periodic review to allow incorporation of pertinent new developments in medical research knowledge, and practice.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2005 Jul (revised 2012 Feb)

Guideline Developer(s)

Society of American Gastrointestinal and Endoscopic Surgeons - Medical Specialty Society

Source(s) of Funding

Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)

Guideline Committee

Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) Guideline Committee

Composition of Group That Authored the Guideline

Committee Members: Marc Zerey, Lisa Martin Hawver, Ziad Awad, Dimitrios Stefanidis, William Richardson, and Robert D. Fanelli

Financial Disclosures/Conflicts of Interest

Society of American Gastrointestinal Endoscopic Surgeons (SAGES) leadership members, committee members, and guidelines authors disclose real and potential conflicts on a yearly basis and whenever they change, and real and potential conflicts are mitigated through mechanisms approved by the SAGES Conflict of Interest Task Force.

Guideline Endorser(s)

American Society of Colon and Rectal Surgeons - Medical Specialty Society

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Guideline Availability

Electronic copies: Available from the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) Web site .

Print copies: Available from the Society of American Gastrointestinal Endoscopic Surgeons (SAGES), 11300 W. Olympic Blvd., Suite 600, Los Angeles, CA 90064; Web site: www.sages.org.

Availability of Companion Documents

None available

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on May 3, 2007. The information was verified by the guideline developer on May 13, 2007. This summary was updated by ECRI Institute on March 14, 2008 following the updated FDA advisory on heparin sodium injection. This summary was updated by ECRI Institute on January 7, 2009 following the U.S. Food and Drug Administration (FDA) advisory on oral sodium phosphate (OSP) products for bowel cleansing. This NGC summary was updated by ECRI Institute on July 26, 2012.

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